11-28-1998

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Introduction

This is simply a brief report, illustrated with a set of photographs, designed to demonstrate the capability (or lack thereof) of the Agfa ePhoto 1280 camera to record images in the near infrared.

About a year ago I acquired an Agfa 1280 camera and among the first things I decided to try was to find out if the camera had any residual infrared sensitivity by which images in the near infrared could be recorded. All indications at the time were that the camera was very well filtered to eliminate infrared from the CCD sensor and even when I flashed an electronic flash directly into the lens which was covered with an 87C filter, the sensor produced a barely detectable image on the camera's LCD screen.

The result of this somewhat cursory experiment was rather discouraging in terms of being able to use the camera for near infrared photography but it was reassuring to know that the infrared was well filtered out and did not contribute at all to the capture of standard color images. I concluded at the time that the 1280 was quite unsuited for near infrard photography.

Follow-up experimentation

Then, in August or September of 1998 someone posted a message on a mail list about the fact that Eric Cheng, a student at Stanford University had used the 1280 for infrared photography. I checked out the website where the images were shown. They indeed showed images that bore unmistakable characteristics of having been made by infrared, rather than light, wavelengths. The photographs were mostly all outdoor scenes taken in what appeared to be broad daylight and with full sunlight falling on the scenes. This is something I had not attempted and decided to try to duplicate the sample images.

Left: no filter shown in color **Middle**: Wratten 87 **Right**: Wratten 87C

Sure enough, when the 1280 was aimed at a sunlit scene and the lens covered with a Wratten 87 filter, a dim reddish image showed up on the LCD panel. Subsequent to

making an exposure the image on the screen looked quite acceptable. With a Wratten 87C, if one switched to manual exposure setting and cranked up the exposure to the maximum, even then the image on the LCD screen was quite dark or sometimes was not visible at all. Also, the image was no longer red but was a neutral grey tone and looked rather dark. Upon making the exposure things did not really improve in terms of the quality of the displayed record. This was possibly due to the fact that the exposure for previsualizing was as high as it could get for actual exposure whereas with the 87 filter one could get a general idea of the view through the filter and then the camera would make the final expoosure adjustment at the time it made the record which then looked quite a bit brighter then the preview.

When these images were donwloaded and opened up in Photoshop, it was possible to make rather acceptable reddish images of the photographs made through the 87 filter. When the color was discarded and some basic tonal adjustments were made, the greyscale record was quite good and exhibited the typical light-toned vegetation and dark skies associated with an infrared reproduction. The images made with the 87C filter needed a significant amount of manipulation of levels with Photoshop. This boosted the noise level of the images and gave them a rather unacceptable grainy and fuzzy appearance.

In addition to the noise generated by trying to extract an image from the limited amount of data recorded by the sensor, the camera seemed to lose its ability to focus automatically, and in close-up work in particular, the images were less and less focused the deeper the infrared filter that was used. This is illustrated below.

Left: no filter and shown in B&W **Middle**: Wratten 87 **Right**: Wratten 87C

Conclusion

All in all my experience supports the fact that the residual infrared sensitivity of the Agfa ePhoto 1280 camera's CCD sensor is high enough that when either the camera's autoexposure program or the manual exposure settings are used, and given plenty of infrared such as in an outdoor scene illuminated by full sunlight (especially in the summer), a decent infrared record can be made. This is particularly the case with the less extreme filters such as the Wratten 87. Under extreme conditions of flash or tungsten illumination it may also be possible to secure a useable image especially if one only uses a Wratten #25 or #29 deep red filter.

Further experiments along these lines will be conducted and they will result in this report being updated as their outcomes become available.

If you have questions or want to discuss any aspect of Agfa ePhoto 1280 applications fee free to write to me right HERE or later at andpph@rit.edu.